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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,952	02/05/2002	Jeffrey R. Baker	INEI 0311 PUSP	6649
7590	08/05/2004		EXAMINER EASTHOM, KARL D	
Mark D. Chuey Brooks & Kushman P.C. 22nd Floor 1000 Town Center Southfield, MI 48075-1351			ART UNIT	PAPER NUMBER
			2832	
			DATE MAILED: 08/05/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,952

Applicant(s)

BAKER ET AL.

Examiner

Karl D Easthom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 and 41-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 21-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The finality of the previous action is withdrawn, prosecution is reopened and a new non-final action is presented herewith to address issues raised in the brief, and in light of the newly cited art.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 and 21-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "circuit board accepting a plurality of electronic elements" renders the scope of the claim unclear because it is not clear that electronic elements are required to be on the circuit board, as argued, on the one hand, or attached to the board as the examiner has argued, or simply that the board allows electronic elements, as none are positively recited.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-3, 5, 8-9, 21-22, 24, 27, 29, 31, 33, 35, and 38-39 are rejected under 35 U.S.C. 102(b) as anticipated by Eventoff '277 or, in the alternative, under 35 U.S.C. 103(a) as obvious over Eventoff in view of Armstrong '503 or '384. Eventoff discloses the claimed invention at figs. 2 with printed circuit board 12 having room for accepting electronic elements such as the utilization circuit 28 at Fig. 4, or it is accepted, as attached, and conductive traces 14, flexible substrate 20, pedestal 18 (cls. 3 and 31), having glue (the adhesive spacer) thereon, and resistive layer 22. In claims 2, 33, and like claims, the resin with molybdenum sulfide is a resistive ink. Fig. 4 discloses the traces of claim 5. In claim 8, the sets at Fig. 4 meet the claim. In claim 9, silver is applied to copper as disclosed at col. 5, lines 40-50, or col. 4, lines 1-10 to form the conductive traces. Like elements for like claims are not repeated here for brevity. As the 103 alternative, where it is not clear if "accepting ...electronic elements" requires the elements to be on the board, Armstrong '503 discloses employing such elements 44 and the other devices depicted thereon at Fig. 6 and par. 69, for the purpose of reading the signals from the sensors, and Armstrong '384 discloses a similar arrangement at Fig. 15 with electronic elements 22, 53, 20 on the same circuit board as pressure sensors 38, like the processing circuit and pressure sensors of Eventoff, so that it would have been obvious to place any number of electronic elements on the circuit board in order to locally read the signals for further processing and transfer in or to a computer for example as suggested at par. 72. For further suggestion, Armstrong '503 at par. 58 discloses mounting the pressure sensitive material directly to the circuit board like that in Eventoff, without use of a force applicator, and discloses using an adhesive and membrane.

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7. Claims 2, 10, 23, 30 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff '277 with Armstrong '384 or '502 (as needed according to the 102/103 alternative), further in view of Burgess or Serban et al. Eventoff with the noted art, discloses the claimed invention, as noted above, except for the carbon ink. Burgess at col. 3, lines 45-57 discloses carbon ink as a known replacement for conductors of metal in pressure type sensing devices such as those of Eventoff such that it would have been obvious to from the well known metal placement out of a carbon type ink. Similarly, Serban discloses at col. 4, lines 40-50 a printed layer of graphite which is taken to be or suggest carbon ink since graphite is carbon and inks are printed. Such an ink would have been obvious where Serban also discloses its use as a known replacement for metal conductors such as those of Eventoff.

8. Claims 28 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff '277 with Armstrong '384 or '502 (as needed according to the 102/103 alternative), as applied to claims above, further in view of Naemura et al. (JP 52-5697). The claimed invention is disclosed as noted above except the adhesive being an ink. Naemura discloses such an ink for the purpose of holding two substrates at a predetermined distance, as noted in the English abstract, so that such an ink would have been obvious for that reason, where Eventoff uses an adhesive for the same exact purpose.

9. Claims 9, 29 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff '277 with Armstrong '384 or '502 (as needed according to the 102/103 alternative), as applied to claims above, further in view of Sugihara or Hasegawa et al. The claimed invention is disclosed as noted above except oxidation preventing layer on copper. Sugihara discloses at par. 155 such A layer for the purpose of protecting an underlying Cu/Ni layer so that it would

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have been obvious to cover a layer to prevent oxidation. Hasegawa discloses that Cu is known to oxidize easily and teaches using a capping layer to stop oxidation, so that such an oxidation preventing layer would have been obvious, see col. 1, lines 50-55, col. 2, lines 65-67.

10. Claims 4, 23, 28, 32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff '277 with Armstrong '384 or '502 (as needed according to the 102/103 alternative), as applied to claims above, further in view of Serban et al. Eventoff with Armstrong discloses the claimed invention, as noted above, except for the pedestal over the conductive layer (4, 23, 32), and the adhesive ink (cls. 28, 34). Serban discloses at Figs. 2a-2b the conductors 32, 34 emanating out from under the pedestal 16 so that the traces can communicate with electrical devices or power, such that it would have been obvious to have the pedestal over the traces for that purpose. For the adhesive ink, Serban discloses at col. 4, lines 30-41, a printable adhesive, which is known in the art to indicate an ink, as noted by applicant at the top of his brief at page 11. Such an ink would have been obvious so that it could be printed and thereby to make a nice neat trace, as suggested by the printable adhesive of Serban.

11. Claims 6-7, 25-26, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eventoff '277, with Armstrong '384 or '502 (as needed according to the 102/103 alternative), further in view of DeVolpi et al. '925. Eventoff with Armstrong discloses as noted above, the claimed invention except for the via. DeVolpi discloses a via 41 for accommodating a conductor and connecting to a circuit voltage, see Fig. 2. It would have been obvious in view of DeVolpi to employ a via in the circuit board of Eventoff for the purpose of connecting to circuit components where both devices respond to pressure and connect to circuit components, and have

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similar electrode structures. Further, Eventoff suggests connecting to a via since the line 34 connects to the center of the electrode pattern where a via exists -26.

12. Applicant's arguments filed 6/17/04 have been considered and they are moot due to the new grounds of rejection. As to Serban, applicant's argument that the pedestal does not comprise conductive traces covered with a non-conductive material is not correct because the pedestal is a non-conductive material and it covers part of the traces as noted above. The contact area is still surrounded.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is (571) 272-1989. The examiner can normally be reached on M-Th, 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karl D Easthom
Primary Examiner
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KDE